

**REMARKS**

**I. Status and Disposition of the Claims**

Claims 32-62 are pending and stand rejected. Claims 32, 34-36, 41-43, 45-47, 49, 50, 52, 58, 61, and 62 are amended herein, not to narrow the scope of the claims, but to clarify the original language of the claims. Section 112 support for the amendments can be found throughout the as-filed specification, including ¶ [0017], abstract and original claims. Accordingly, no new matter has been introduced by this Amendment.

**II. Summary of the Non-Final Office Action**

In the Non-Final Office Action dated August 14, 2009, the Office rejects:

- claims 32-61 under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. (See Non-Final Office Action, page 2);
- claims 32-34, 37, 38, 41, 42, 57, 58, and 62 under 35 U.S.C. § 102(b), as anticipated by or, in the alternative, under 35 U.S.C. § 103(a) as obvious over EP 0 685 435 ("EP '435") (See *id.* at 3);
- claims 32-45 and 48-62 under 35 U.S.C. § 103(a) as being unpatentable over EP '435 in view of Tarancón, "Synthesis of Nanocrystalline Materials for SOFC Applications by Acrylamide Polymerisation," 118 JOURNAL OF POWER SOURCES, 256-264 (2003) ("Tarancón") (See *id.* at 4-6); and
- claims 46-47 under 35 U.S.C. § 103(a) as being unpatentable over EP '435 in view of Tarancón as applied to claim 32 above, and further in view of US Patent Appln Pub No. 2004/0038133 to Yamaguchi et al. ("Yamaguchi") (See *id.* at 6).

### **III. Response to Claim Rejections**

#### **A. 35 U.S.C. § 112, second paragraph rejection of claims 32-61**

Claims 32-61 were rejected under 35 U.S.C. § 112, second paragraph for reasons set forth at page 2 of the Non-Final Office Action. In particular, the Examiner questioned how the recited method steps arrive at an electrolyte membrane and/or a cathode and/or an anode in an electrochemical device. Office Action at 2.

Applicants submit that one skilled in the art would understand claim 32, as amended, to be reciting steps to manufacture an electrochemical cell, wherein the anode, cathode, and electrolyte membrane comprise a ceramic material and wherein the ceramic material of the anode, cathode, and/or electrolyte membrane is prepared by the recited thermally treating, calcining, and sintering processes. Further, the Abstract and at least ¶ [0001] of the as-filed specification establish that Applicants regard their invention as not limited to only where the ceramic material of the anode was made by the recited process. Applicants submit that claim 32, as amended, is definite and request the withdrawal of the Section 112 rejection.

Claims 33-61 are dependent directly or indirectly from claim 32 and do not present issue of indefiniteness of their own. Therefore, claims 33-61 are definite for at least the reasons that claim 32 is definite. Applicants respectfully request the withdrawal of the rejections to claims 33-61.

**B. 35 U.S.C. § 102(b) and 103(a) rejection of claims 32-34, 37, 38, 41, 42, 57, 58 and 62**

Claims 32-34, 37, 38, 41, 42, 57, 58 and 62 were rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 103(a) as obvious over EP '435. See Non-Final Office Action, page 3. Relying on the disclosure in EP '435 at page 3, lines 5-39, the Examiner alleged that Rohm discloses a process "wherein an aqueous solution of metal cations are thermally treated along with an ethylenically unsaturated monomer with an ester moiety and a cross-linking monomer with two ethylenically unsaturated ester moieties to provide a gel. . ." *Id.* Applicants respectfully disagree.

Nothing in the cited sections of EP '435 support this argument. EP '435, at page 3, lines 5-39, discloses methods for functionalizing emulsion polymer resins. Nothing suggests the use of (1) an ethylenically unsaturated monomer with an ester moiety or (2) a cross-linking monomer, let alone a cross-linking monomer with two ethylenically unsaturated ester moieties. The only reference to an ester moiety in the cited section is at lines 23, 27, 33, and 39, and then only in the context of forming a non-ester moiety containing compound. In other words, there is no teaching or suggestion of forming a gel with an ethylenically unsaturated monomer with an ester moiety or a cross-linking monomer with two ethylenically unsaturated ester moieties.

For at least this reason alone, EP '435 does not anticipate or render obvious a claim limitation in claims 32 or 62.<sup>1</sup> Applicants respectfully requests the withdrawal of the rejections.

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<sup>1</sup> While not address in detail here, Applicants do not agree with the Examiner allegation that in the context of the claims, "[s]intering is part and parcel of calcinations." *Id.*

**C. 35 U.S.C. § 103(a) rejection of claims 32-45 and 48-62**

Claims 32-45 and 48-62 were rejected under 35 U.S.C. § 103(a) as being unpatentable over EP '435 in view of Tarancón for the reasons set forth at pages 4 through 6 of the Non-Final Office Action. The Examiner premised the rejection on the assertion that EP '435 discloses all claim limitations in claim 32 except the overall inclusion into an electrochemical device or the sintering of the power. Office Action at 4. It was concluded that "Tarancon discloses the usage of sintering and the parts in an electrochemical device. . ." *Id.* Claims 33-45 and 48-62 were also similarly rejected. *Id.* at 4-6.

As pointed out in Section B, EP '435 does not disclose or suggest the use of either (1) an ethylenically unsaturated monomer with an ester moiety or (2) a cross-linking monomer, let alone a cross-linking monomer with two ethylenically unsaturated ester moieties. Tarancón does not cure this defect, relying upon acrylamides. See Tarancón at Abstract. Applicants submit that, for this reason alone, the Examiner failed to make a *prima facie* case of obviousness and request the withdrawal of the rejections.

**D. 35 U.S.C. § 103(a) rejection of claims 46-47**

Claims 46-47 under 35 U.S.C. § 103(a) were rejected as being unpatentable over EP '435 in view of Tarancón as applied to claim 32 above, and further in view of Yamaguchi for the reasons set forth at page 6 of the Non-Final Office Action. Although it is acknowledged that neither EP '435 nor Tarancón discloses either specific crosslinking agents, the Examiner alleged that "it would be obvious to a skilled artisan to pick one particular agent." Office Action at 6. The Examiner further alleged that

"Yamaguchi discloses in a fuel cell that in order to control polymerization a skilled artisan would be motivated to use polyethyleneglycol diacrylate." *Id.* Applicants respectfully disagree for at least the following reasons.

First, neither EP '435 nor Tarancón discloses the need to use a crosslinking agent, let alone a cross-linking moner with two ethlenically unsaturated ester moieties.

Second, Yamaguchi does not correct the other deficiencies of EP '435 and Tarancón.

Accordingly, the Examiner failed to articulate why one skilled in the art would modify EP '435 according to the teachings in Yamaguchi or how the modification would work. Applicants respectfully request the withdrawal of the rejections.

#### IV. Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to Deposit Account No. 06-0916.

Respectfully submitted,

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